217/782-2113

CONSTRUCTION PERMIT - REVISED

PERMITTEE

Intermet Havana Foundry
Attn: S. David Sanders, Ph.D.
227 West Wagner Avenue
Havana, Illinois 62644

Application No.: 00030063 I.D. No.: 125804AAK
Applicant's Designation: PROCMOD Date Received: May 31, 2002
Subject: Iron Casting/Molding Line
Date Issued: February 7, 2003
Location: 227 Wagner Avenue, Havana

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of the emissions units as listed as follows in Special Condition 2 as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1. Description

Intermet Havana Foundry is a secondary metal casting facility, the current permit request is for the modification of this construction permit to clarify details on emission units, to remove non-existent units, group units into processes and revise facility wide throughput and emission limits to aid in process flexibility.

2. List of Emission Units and Pollution Control Equipment

Process	Emission Unit(s)	Description/ Construction Date	Emission Control Equipment
Metal Melting	Preheater (MP-1)	1975	Melt Torit (TCC-8)
	Electric Induction Furnaces (MF-1, MF-2, MF-3, MF-4)	Melts scrap metals MF-1, MF-2, MF-3: Prior 1972, MF-4: 1998	Melt Torit (TCC-8)
Metal Treatment	Fischer Converter Treatment Ladles (TL-1, TL-2)	1994	Plant Torit (TBH-1)
Core Production	Triethylamine System (TEA-1)	2000	Packed Acid Scrubber (PS-1)
	Sand and Resin Mixers (RM-1) and Core Machines (CM-1, CM-2)	2000	Packed Acid Scrubber (PS-1)
	Core Storage (CS-1)	2000	None
Sand Handling and Mold Production	Muller (SH-1)	Prior 1972	Melt Torit (TCC-8)
	Aeration (Prior to Mold Making)(SH-2)	Prior 1972	Melt Torit (TCC-8)
	Sprue Table(SH-3)	2000	None

Process	Emission Unit(s)	Description/ Construction Date	Emission Control Equipment
Sand Handling and Mold Production	Return Sand Conveyors (SH-4)	Prior 1972 Modified 2000	Torit Baghouses #3 and #4 (TBH-5, TBH-6)
	Magnetic Metal Separator (SH-5)	Prior 1972	Torit Bughouses #3 and #4 (TBH-5, TBH-6)
	Water Spray and Aerator (SH-6)	2001	Aerator: Plant Torit (TBH-1)
	Fluid Bed Cooler (SH-8)	Prior 1972	Melt Torit (TCC-8)
	Bucket Elevator (SH-8)	Prior 1972	Melt Torit (TCC-8)
	Rotary Screen (SH-9)	Prior 1972	Melt Torit (TCC-8)
	Mold Machines (MM-1, MM-2)	Prior 1972(Rebuilt in 1999/2000)	None
Pouring	Pouring Lines (PL-1, PL-2)	1994	None
Cooling	Cooling Lines (CL-1, CL-2)	2000	Torit Baghouses #1 and #2 (TBH-3 and TBH-4)
Shakeout	Feeder Shaker 1 (FS-1)	2000	Torit Baghouses #1 and #2 (TBH-3 and TBH-4)
	Feeder Shaker 2 (FS-2)	2000	Torit Baghouses #3 and #4 (TBH-5 and TBH-6)
	Shakeout Machines (SO-1, SO-2)	2000	Torit Baghouses #3 and #4 (TBH-5 and TBH-6)
Finishing	Casting Cooling Shakers (CC-1, CC-2)	2000	Torit Baghouses #3 and #4 (TBH-5 and TBH-6)
	Golf Shot Blast Line 1 (SB-1)	2000	Torit Cartridge Collector #1 (TCC-10)
	Golf Shot Blast Line 2 (SB-2)	2000	Torit Cartridge Collector #2 (TCC-11)
	Alternate Pangborn Shot Blast #1 (BC-1)	Prior 1972	Pangborn Torit #1 (TCC-5)
	Alternate Pangborn Shot Blast #2 (BC-2)	Prior 1972	Pangborn Torit #2 (TCC-6)
	Alternate Wheelabrator Shot Blast (BC-3)	1994	Wheelabrator Torit (TBH-2)
	Sample Shot Blast (BC-4)	1998	VS-3000 Cartridge Collector (TCC-9)

3. Applicability Provisions and Applicable Regulations

a. The "affected foundry equipment" for the purpose of these unit-specific conditions, is each piece of equipment as described in Conditions 1 and 2 unless otherwise stated in the following conditions as unit specific.

b. The affected foundry equipment is subject to 35 IAC 212.123 which provides that:

i. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to Section 212.122 of this Subpart [35 IAC 212.123(a)].

ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period [35 IAC 212.123(b)].

c. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source [35 IAC 212.301].

d. If particulate collection equipment is operated pursuant to Sections 212.304 through 212.310 and 212.312 of 35 IAC Subtitle B Section 212, emissions from such equipment shall not exceed 68mg/dscm (0.03 gr/dscf) [35 IAC 212.313].

e. The affected foundry equipment is subject to 35 IAC 212.321(a), which provides that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321, [35 IAC 212.321(a)].

i. The emissions of particulate matter into the atmosphere in any one hour period from each of the affected foundry equipment shall not exceed the allowable emission rates specified in the following equation:

$$E = A\ (P)^{B}$$

Where:

P = Process weight rate; and,
E = Allowable emission rate; and,

1. For process weight rates up to 408 MG/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	1.214	2.54
B	0.534	0.534

2. For process weight rates in excess of 408 MG/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	11.42	24.8
B	0.16	0.16

Where:

P = Process weight rate in metric or English tons per hour, and

E = Allowable emission rate in kilograms or pounds per hour.

[35 IAC 212.321]

f. No person shall cause or allow the total emissions of sulfur dioxide into the atmosphere in any one hour period from all fuel combustion emission sources, located outside of the Chicago, St. Louis (Illinois) or Peoria major metropolitan areas, owned or operated by such person and located within a one mile radius (1.6kn) from the center point of any such fuel combustion emission source to exceed the emissions determined by the following Sections 214.183 through 214.185, whichever is applicable [35 IAC 214.182].

g. Section 214.183 – General Formula

i. The general formula is:

$$E = AX^B Y^C$$

ii. Symbols used in the general formula mean the following:

E = Total allowable emission of sulfur dioxide into the atmosphere in any one hour period from all fuel combustion emission sources owned or operated by such person and located within a 1.6 km (1 mile) radius from the center point of any such emission source.

X = Average actual stack height as determined by method outlined in Appendix C.

Y = Effective height of effluent release as determined by method outlined in Appendix C.

iii. The general formula may be used with either metric or English units as follows:

Parameter	Metric	English
E	kg/hr	lbs/hr
X, Y	m	ft
A	0.04347 kg/hr	0.007813 lbs/hr
B	0.11	0.11
C	2	2

h. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].

i. The affected foundry equipment is subject to 35 IAC 215 Subpart K, Use of Organic Material, which provides that:

i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 3(d)(ii) (see also 35 IAC 215.302) and the following exception: If no odor nuisance exists the limitation of this Condition shall apply only to photochemically reactive material [35 IAC 215.301].

ii. Emissions of organic material in excess of those permitted by Condition 3(d)(i) (see also 35 IAC 215.301) are allowable if such emissions are controlled by flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the

hydrocarbons to carbon dioxide and water [35 IAC 215.302(a)].

j. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere form any fuel combustion emission source with actual heat input greater than 2.9MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

4. Non-Applicability of Regulations of Concern

The affected foundry equipment is not subject to 40 CFR 60 Subpart AAA, since the affected equipment is not either an electric arc furnace or Oxygen-Argon Decarburization Vessel, AOD.

5. Operational and Production Limits and Work Practices

a. The affected foundry equipment shall not exceed the following material throughput limits:

Process	Affected Equipment	Material	(T/Hr)	(T/Yr)
Metal Melting	Preheater (MP-1), Electric Induction Furnaces (MF-1, MF-2, MF-3, MF-4)	Metal	23	157,248
Metal Treatment	Fischer Converter, Treatment Ladles (TL-1, TL-2)	Metal	23	157,248
Core Production	Triethylamine System (TEA-1), Sand and Resin Mixers (RM-1), Core Machines (CM-1, CM-2), Core Storage (CS-1)	Core Sand	6	44,928
Sand Handling and Mold Production	Sand Handling (SH-1 – SH-9), Mold Machines (MM-1, MM-2)	Sand: as measured through the Muller (SH-1)	125	883,584
Pouring	Pouring Lines (PL-1, PL-2)	Metal	23	157,248
Cooling	Cooling Lines (CL-1, CL-2)	Metal	23	157,248
Shakeout	Feeder Shakers (FS-1, FS-2) Shakeout Machines (SO-1, SO-2)	Metal	23	157,248
Finishing	Casting Cooling (CC-1, CC-2) Shot Blast Lines (SB-1, SB-2)	Cast Metal Parts	15	89,856

6. Emission Limitations

The affected foundry equipment is subject to the following:

a. Emissions from the affected foundry equipment shall not exceed the following limits:

Emissions (Tons/Month)	PM	PM_{10}	VOM	CO	SO_2	NO_x	Pb
Process							
Metal Melting	0.70	0.57	0.23	0.065	---	---	0.025
Metal Treatment	0.84	0.84	0.03	---	---	---	---
Core Production	0.69	0.69	0.36	---	---	---	---
Sand Handling and Mold Production	6.72	1.03	---	---	---	---	---
Pouring	4.56	0.15	0.62	2.12	0.15	0.07	0.001
Cooling	0.07	0.01	2.65	12.34	---	---	0.00
Shakeout	0.08	0.006	1.08	0.04	---	---	0.00
Finishing	1.52	0.15	0.36	---	---	---	---
Gas Consumption	0.08	0.08	0.15	0.57	0.01	2.88	---
Fugitive	0.15	0.03	---	---	---	---	---
Totals (monthly)	15.41	3.55	5.47	15.13	0.16	2.95	0.026

Emissions (Tons/Year)	PM	PM_{10}	VOM	CO	SO_2	NO_x	Pb
Process							
Metal Melting	7.02	5.71	2.36	0.65	---	---	0.25
Metal Treatment	8.42	8.42	0.39	---	---	---	---
Core Production	6.90	6.90	3.68	---	---	---	---
Sand Handling and Mold Production	67.25	10.33	---	---	---	---	---
Pouring	45.60	1.57	6.29	21.23	1.57	0.79	0.01
Cooling	0.77	0.13	26.57	123.44	---	---	0.00
Shakeout	0.83	0.06	10.88	0.41	---	---	0.00
Finishing	15.26	1.59	3.66	---	---	---	---
Gas Consumption	0.86	0.86	1.53	5.76	0.17	28.80	---
Fugitive	1.51	0.30	---	---	---	---	---
Totals (Monthly)	154.42	35.86	55.35	151.49	1.75	29.59	0.27

These limits are based on the usage limits in Condition 5(d) and emission factors and limits (in the case of source total) as delineated in the permit application.

b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

c. The source has addressed the applicability and compliance of 40 CFR 52.21, PSD. These limits continue to ensure that the construction and/or modification addressed in this construction

permit does not constitute a new major source or major modification pursuant to these rules, as demonstrated in Attachment A.

7. Testing Requirements

None

8. Monitoring Requirements

The Permittee shall operate, maintain, and repair emission units in the foundry, including their associated control systems in a manner to minimize emissions and reasonably assure compliance with applicable emission standards by implementing the following procedures.

a. Operating Procedures: Written operating procedures shall be developed and maintained describing normal air pollution control equipment operation. Such procedures shall include maintenance practices and may incorporate the manufacturers recommended operating instructions.

b. Inspections: Visual inspections of air pollution control equipment shall be conducted on at least a weekly basis.

c. Repairs: Prompt repairs shall be made upon identification of need either as a consequence of formal inspections or other observations in conformance with good air pollution control practice. Maintenance and repair shall be coordinated with scheduled outages of units.

d. Records: Records of inspection, maintenance, and repair activities for all equipment shall be kept on site and shall include as a minimum:

i. Date of inspection, maintenance, and repair activities.

ii. Description of maintenance or repair activity if not routine preventative maintenance.

iii. Probable cause for requiring maintenance or repair if not routine or preventative.

9. Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected foundry equipment to demonstrate compliance with Conditions 3, 5, and 6, pursuant to Section 39.5(7)(b) of the Act:

a. Material throughput (tons/month and tons/year); and

b. Emissions of: PM, PM_{10}, SO_2, NO_x, VOM, CO, and Pb in lb/hour, tons/month and tons/year.

10. Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected foundry equipment with the permit requirements, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

11. Operational Flexibility/Anticipated Operating Scenarios

None

12. Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 9 and the emission formula listed below:

a. To determine compliance with Condition 6, emissions from the affected foundry equipment shall be calculated based on the following equation:

Throughput x Emission Factor x (1-Control Efficiency) = Emissions

13. The Permittee is allowed to operate the affected foundry under this construction permit until final action is taken on their CAAPP permit.

Please note that this permit has been revised to clarify details on emission units, to remove non-existent units, group units into processes and revise facility wide throughput and emission limits to aid in process flexibility with a net results of an increase in actual emissions as shown in Attachment A.

If you have any questions on this permit, please contact Kevin Smith at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:jar

cc: Region 2

Attachment A

Table I

Past Actual Emissions (Tons/year)
(1998-1999)

PM	PM_{10}	VOM	CO	SO_2	NO_x	Pb
55.59	10.96	24.45	56.11	0.62	3.14	0.09

Table II
Proposed Emission Limits (Tons/Year)

PM	PM_{10}	VOM	CO	SO_2	NO_x	Pb
154.42	35.86	55.35	151.49	1.75	29.59	0.26

Table III
Net Emission Increase (Tons/Year)

	PM	$PM1_0$	VOM	CO	SO_2	NO_x	Pb
Table I	55.59	10.96	24.45	56.11	0.62	3.14	0.09
Table II	154.42	35.86	55.35	151.49	1.75	29.59	0.26
Net Change	98.83	24.90	30.90	95.38	1.13	26.45	0.17

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